A. W. SMITH.

TYPE WRITING MACHINE.

APPLICATION FILED MAY 11, 1912.

1,043,160.

Patented Nov. 5, 1912.

3 SHEETS—SHEET 1.

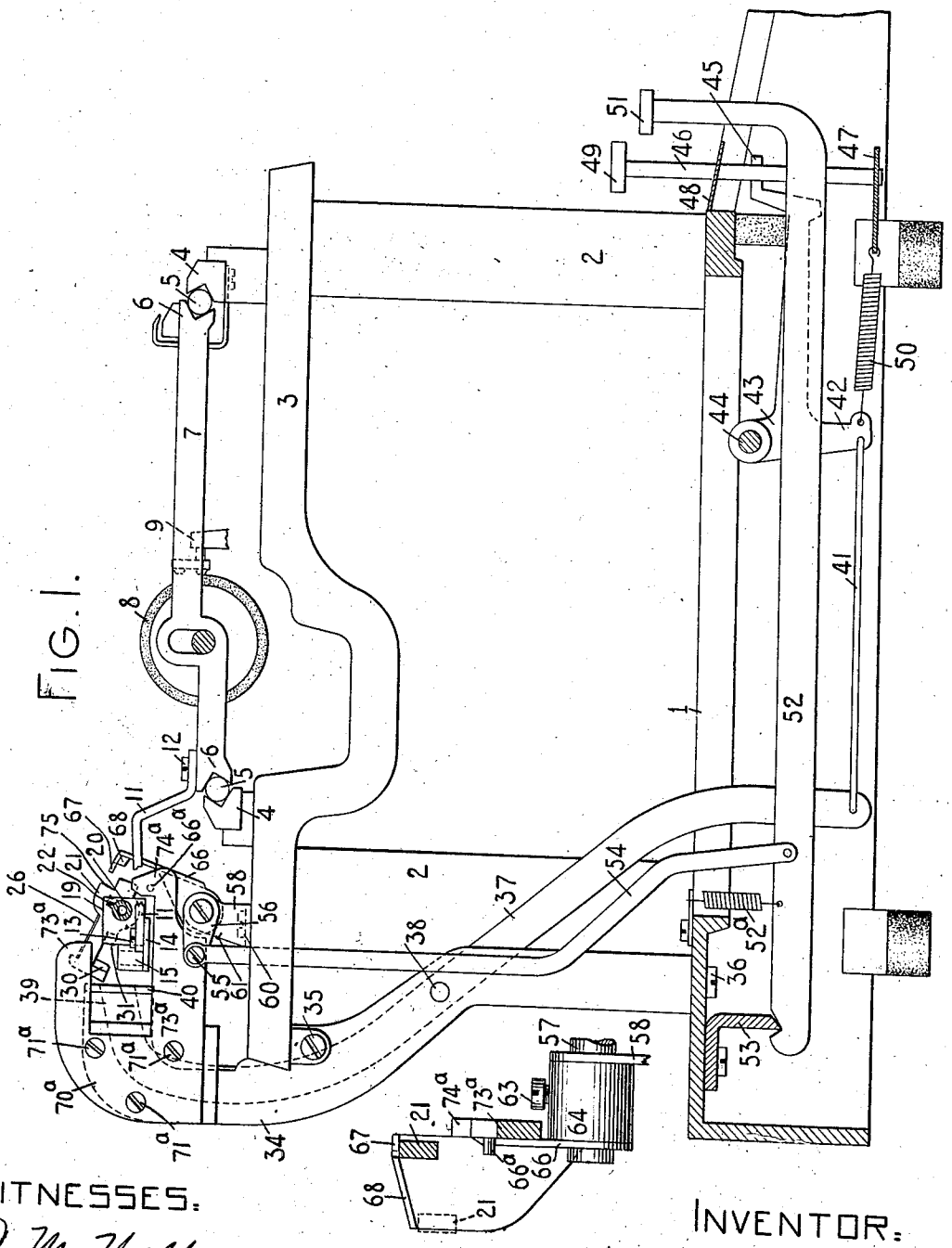

FIG. 1.

WITNESSES.

E. M. Wells.

Charles E. Smith

INVENTOR.

Arthur W. Smith

By Jacob Felbel

HIS ATTORNEY

FIG. 2.

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3 SHEETS—SHEET 2.

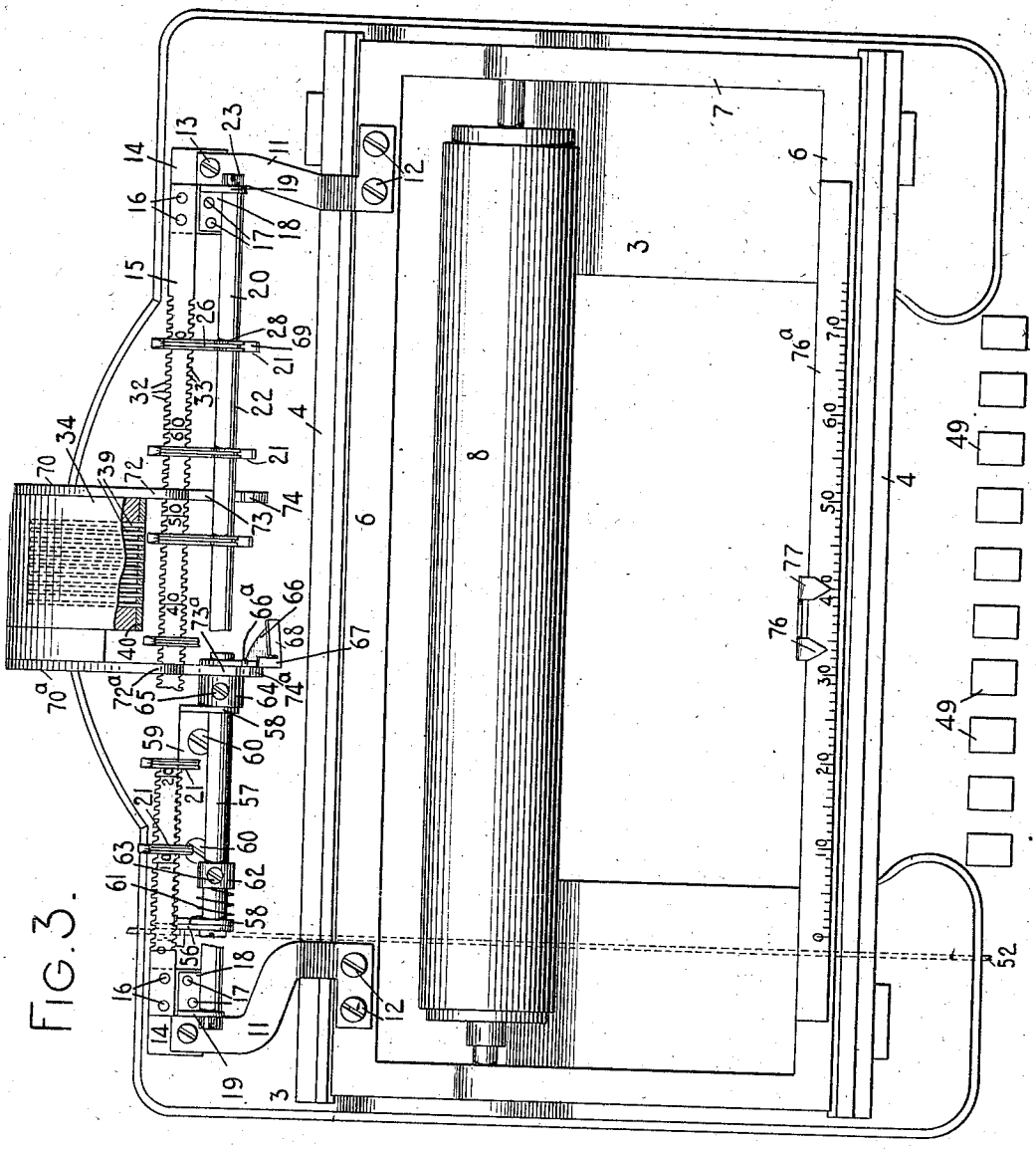

FIG. 3.

WITNESSES:

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3 SHEETS—SHEET 3.

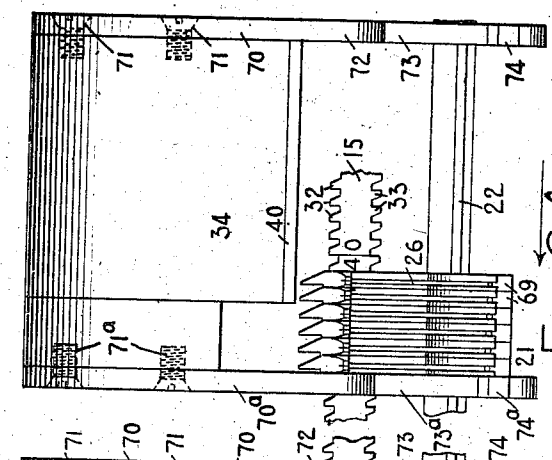

FIG. 6.

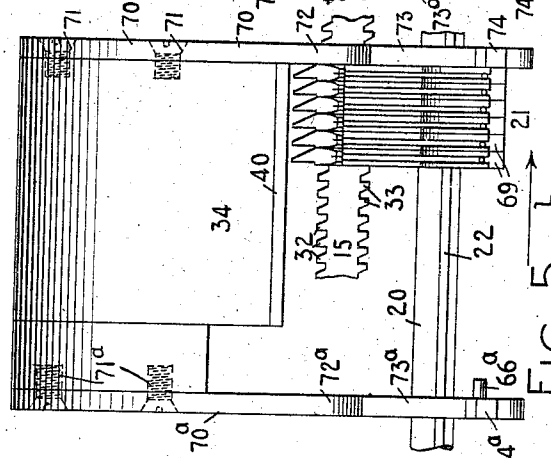

FIG. 5.

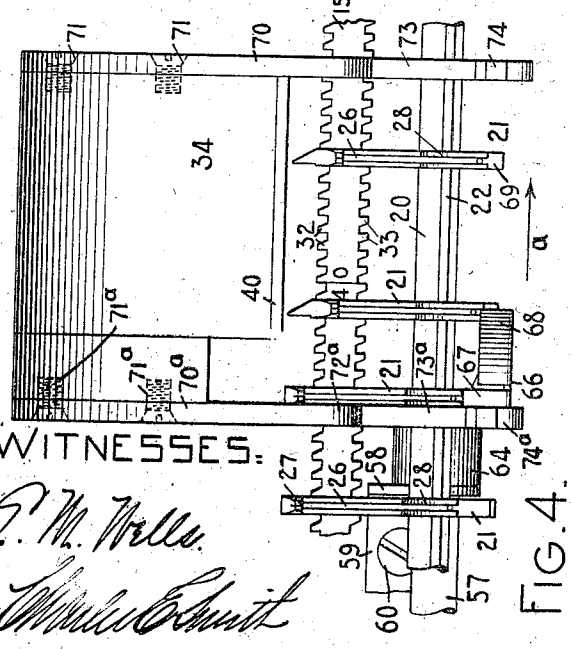

FIG. 4.

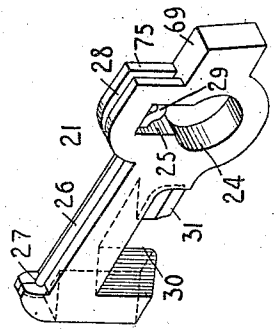

FIG. 8.

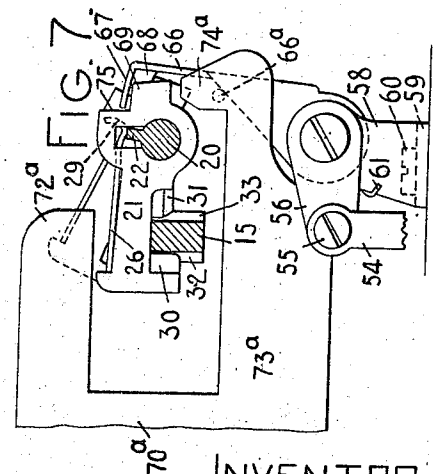

FIG. 7.

WITNESSES:

E. M. Wells.

Edward E. Smith

INVENTOR:

Arthur W. Smith

By Jacob Felbel

HIS ATTORNEY

UNITED STATES PATENT OFFICE.

ARTHUR W. SMITH, OF NEW YORK, N. Y., ASSIGNOR TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

1,043,160. Specification of Letters Patent. Patented Nov. 5, 1912.

Application filed May 11, 1912. Serial No. 696,560.

To all whom it may concern:

Be it known that I, ARTHUR W. SMITH, citizen of the United States, and resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to tabulating mechanism.

One object of my invention, generally stated, is to provide means whereby column stops, the number of which need not be in excess of the number that are actually used at any one time in the machine, may be readily adjusted or set to different column determining positions.

A further object of my invention, generally stated, is to provide simple and efficient means for "clearing" the column stops preparatory to resetting them in different arrangement when the character of the work is such as to require a different positioning of the column stops.

To the above and other ends which will hereinafter appear my invention consists in the features of construction, combinations of devices and arrangements of parts set forth in the following description and particularly pointed out in the appended claims.

In the accompanying drawings, in which like reference numerals designate corresponding parts in the various views, Figure 1 is a fragmentary side elevation, with parts in section, of one form of typewriting machine embodying my invention. Fig. 2 is an enlarged detail fragmentary rear elevation of the stop setting and clearing devices; a coöperating column stop being shown in section. Fig. 3 is a fragmentary plan view of the machine with parts broken away. Fig. 4 is an enlarged detail fragmentary plan view showing a portion of the tabulator and column stop clearing and setting mechanisms. Fig. 5 is a view corresponding to Fig. 4, with some of the parts omitted, and showing the column stops after they have been grouped. Fig. 6 is a like view of the same showing the group of column stops as they appear just preparatory to resetting the stops. Fig. 7 is an enlarged detail fragmentary side elevation with parts in section of a portion of the construction shown in Fig. 4. Fig. 8 is an enlarged detail perspective view of one of the column stops.

The present invention is in the nature of an improvement upon the construction disclosed in my prior application Serial No. 687,400, filed March 30, 1912.

This invention has some of the same general objects in view as my prior construction but is intended to materially simplify the operation of the mechanism for positioning, setting and clearing the column stops.

One form of the invention is shown in the present instance embodied in a No. 11 Remington machine, although some of the features of that machine are only conventionally represented. Moreover, only so much of the machine is shown as may be necessary to arrive at an understanding of the present invention. It will be understood, however, that my invention may be embodied in various styles of typewriting machines and that various changes in the construction may be made as may be required to effect such embodiment.

The frame of the machine comprises a base 1, corner posts 2 and a top plate 3. Fixed oppositely grooved carriage rails 4 are secured to the top plate of the machine and are adapted to receive anti-friction balls or rollers 5 which in turn are received in oppositely grooved carriage rails 6 of a carriage 7. A cylindrical platen 8 is mounted on the carriage for traveling movement therewith over the top plate from side to side of the machine. The usual type bars 9 are segmentally arranged to strike upwardly and rearwardly against the front face of the platen, the type bars being actuated by the usual type bar actuating mechanism, not shown.

Rearwardly extending bracket arms 11 are secured to the rear cross bar of the carriage by screws 12. Each bracket arm is connected by a screw 13 to a supporting plate 14 and a locking bar 15 is riveted or otherwise secured to each supporting plate 14, as indicated at 16. Each supporting plate also has riveted thereto, as at 17, a bracket 18 provided with an upwardly extending arm 19 apertured to receive a column stop support or bar 20. In the present instance this column stop bar is in the nature of a fixed pivot rod on which a

series of column stops, each designated as a whole by the reference numeral 21, is pivoted. This pivot rod is shown provided with a feather or spline 22 which projects from the rod throughout the length thereof and is received in corresponding openings in the bracket arms 19 to lock the pivot rod against turning movement in the openings in the bracket arms. Headed screws 23 are received in tapped openings in the ends of the pivot rod 20 and the heads of these screws bear against outer faces of the bracket arms, thereby preventing a longitudinal movement of the pivot rod in its bearings in the supporting brackets. It will thus be understood that the column stop bar 20 is maintained fixed against rotative movement but that the column stops are enabled to receive a relative sliding adjustment along the column stop bar and are likewise mounted for pivotal movement thereon, each column stop in its pivotal movement moving in a plane which extends transversely of the bar, as will hereinafter more clearly appear. Each column stop is apertured, as at 24, to receive a pivotal bearing on the stop bar 20 and has an enlarged opening 25 greater than the thickness of the spline 22 to enable the spline to be received therein and yet afford a limited pivotal movement of the stop from the lowermost position shown in Fig. 7, to the uppermost position represented in the same view. Each column stop has one end of a wire spring detent 26 secured thereto, as at 27. This detent extends longitudinally of the stop and is received at its free end portion in a slot 28 in the stop so that the end portion 29 of the detent is adapted to coöperate with the spline to maintain the column stop against accidental displacement from any position to which it may be moved so that the stop may remain indefinitely in such position. For example, the spring detent tends to maintain the stop in either one of the two pivotal positions to which it may be moved on the stop rod, and which are shown in Fig. 7, and the detent likewise tends to maintain the column stop against accidental displacement longitudinally of the column stop rod. Each column stop is also provided with oppositely disposed teeth 30 and 31, which are adapted to engage in interdental spaces between teeth 32 and 33 respectively at opposite sides of the locking bar 15. When a column stop is turned to the lowermost position represented in Fig. 7, its teeth are engaged in interdental spaces between the teeth 32 and 33 to lock the column stop against movement along the column stop bar. When, however, a column stop is turned to the uppermost position shown in Fig. 7, its teeth are thrown out of engagement with the teeth on the bar 15 so that the disengaged column stop is free to receive a relative adjustment along the column stop bar on which it is mounted and adapted to slide.

When the column stops are in engagement with the locking bar 15 they are positioned where they are adapted to coöperate with key controlled tabulator stop mechanism of any suitable character. In the present instance I have shown tabulator stop mechanism similar to that embodied in the No. 11 Remington machine. Thus tabulator frame 34 is secured to the frame of the machine by screws 35 and 36 so that the tabulator frame is fixed to the frame of the machine and for the purpose of the present invention may be regarded as a part thereof. A series of denominational stop levers 37 are pivoted on a pivot rod 38 fixed at its ends in the tabulator frame. The denominational tabulator stop levers are extended upwardly and forwardly to form denominational stops 39, which are adapted to be projected through slotted openings in a guide plate 40 secured to the tabulator frame. The lower end of each denominational stop lever is connected to a forwardly extending link 41 which in turn is pivoted to a depending arm 42 of an angular lever 43, the various angular levers being mounted on a pivot rod 44 secured to the base of the machine. A forwardly extending arm 45 on each angular lever is connected to a key stem 46 received in guide slots in two fixed guide plates 47 and 48, each stem being provided with the usual denominational key 49. Each angular lever has its depending arm 42 connected to one end of a contractile spring 50, the opposite end of which is connected to the guide plate 47. A depression of a denominational key 49 is effective to project the corresponding denominational stop 39 into the path of the column stops and release the carriage by the usual carriage releasing mechanism, not shown.

The means by which the column stops are cleared and by which they are set will now be described. Let it be assumed that all of the column stops are set, as indicated in Fig. 3, and that it is desired to "clear" them preparatory to resetting the column stops in a new arrangement. The operator moves the carriage to the left to the limit of its movement in that direction and depresses a controlling key 51 and then moves the carriage from left to right and all of the column stops will be moved out of locking engagement with the locking bar 15 and will be grouped, as represented in Fig. 5, as will hereinafter appear. The key 51 is carried by a key lever 52, fulcrumed on the usual fulcrum bar 53 and returned to normal position by a spring 52ª. The key lever is connected with an upwardly extending link 54 which is pivoted at 55 to a rearwardly extending crank arm 56. This

crank arm is fixed to a shaft 57 adapted to turn in bearing openings in upwardly extending arms 58 carried by a bracket 59, the bracket being secured to the top plate of the machine by screws 60. A coiled spring 61 surrounds the rock shaft 57 and is fixedly connected thereto at one end by means of a collar 62 which is secured to the rock shaft by a set screw 63. One end of the coiled spring is seated in an opening in this collar and the other end thereof is fixed to the left-hand bracket arm 58. The rock shaft 57 is extended to the right beyond the right-hand bracket arm 58 and has a hub 64 secured thereto by means of a screw 65. This hub has an arm 66 fixedly connected thereto, the arm being provided with a rearwardly projecting finger or column stop setting device 67 of a width which corresponds approximately to the width of a column stop. The arm 66 is also formed with a rearwardly projecting clearing device, wiper or cam 68 arranged to the right of the finger 67 and extending at an inclination to the right and downwardly therefrom. The power of the spring 61 is exerted to normally maintain the arm 66 and the parts carried thereby in the inoperative position represented in Figs. 1 and 3. When, however, the finger key 51 is depressed a downward movement is transmitted to the link 54 which is effective to turn the rock shaft 57 to move the arm 66 rearwardly to the position represented in Figs. 4 and 7 where it is limited in its movement by a stop pin 66^a. If the carriage be at the extreme left-hand position when the arm 66 is moved rearwardly to and maintained in operative position, the cam 68 will be in a position where the forward upper corners 69 of the column stops will be in coöperative relation with the cam to coact therewith during a movement of the carriage to the right. The column stops are brought successively into contact with the lower face of the cam, as indicated in full lines in Fig. 2, and a continued movement of the carriage to the right causes the portion of a column stop engaged by the cam to be moved downward, as indicated in dotted lines in Fig. 2. This effects a turning movement of each stop as it is moved along the cam, the stop turning from the lowermost position indicated in Fig. 7 to the uppermost position shown in that figure. The effect of this turning movement of the column stops, therefore, is to disengage them from the locking bar 15 by which they are locked to travel with the carriage, so that a relative adjustment between the column stops and the column stop bar may be effected.

From an inspection of the drawings it will be seen that the tabulator frame has fixed thereto at its right-hand side, and to the right of the denominational stops, a positioning device 70 which is secured to the tabulator frame by screws 71. This positioning device 70 is in the nature of a sheet metal plate which is provided with two forwardly extending arms 72 and 73. The arm 72 extends forwardly above the column stop bar and above the locking bar 15, whereas the lower arm 73 extends beneath the locking bar and column stop bar and has an upwardly extending engaging member 74. It will likewise be observed that a similar positioning device or plate 70^a is secured to the left-hand side of the tabulator frame 34 by screws 71^a. The construction of this second positioning device 70^a is identically the same as the positioning device 70 and the same reference numerals with the addition thereto of the exponent "a" will be employed to designate parts of the positioning device 70^a which correspond to those on the plate 70. It will be seen that these two positioning devices, or sets of positioning devices, are spaced apart and are arranged on opposite sides of the set of denominational stops 39, and are maintained fixed on the frame of the machine. Moreover, it will be observed from an inspection of Figs. 3 and 4 that the stop setting finger or device 67 and the clearing device 68 are arranged intermediate the two positioning plates 70 and 70^a, and that the stop setting finger 67 is arranged adjacent to the inner face of the plate 70^a. When the column stops are in the operative position where they are in locking engagement with the bar 15, the stops pass freely through the openings between the arms 72 and 73 and 72^a and 73^a during the travel of the carriage. However, the construction and arrangement of the parts are such that when the column stops move with the carriage in the direction of the arrow *a* in Fig. 4, and the clearing device is maintained in operative position by the key 51, the column stops will be brought successively into coöperation with the cam 68 after the stops pass the positioning plate 70^a, and will be turned individually and successively from the lowermost or operative position of the stops shown in Fig. 7 to the uppermost position of the stops shown in that view. This turning movement of the stops thus automatically effected during the travel of the carriage to the right is brought about before the column stops reach the stop positioning device or plate 70.

The positions of the parts as they appear in Fig. 7 shows the coincident outline both of the positioning devices 70 and 70^a. It will be understood, therefore, that when the column stops are moved by the cam 68 out of engagement with the locking bar 15, they will be brought successively into such position that the rear end of each stop will have its path intersected by the arm or engaging member 72, whereas the forward

lower end of the stop will travel in a path which is intersected by the engaging member 74. It follows, therefore, that during the continued movement of the carriage to the right the released column stops will be intercepted by and grouped successively against the stop positioning plate 70, as indicated in Fig. 5. Thus the first released stop during the movement of the carriage in the direction of the arrow *b* in Fig. 5 will be arrested by the positioning plate 70, while the carriage and the column stop bar 20 continue their movement in the direction of the arrow, thereby bringing the next column stop into engagement with the one which has been previously arrested, and so on until all of the column stops have been grouped together as shown. The carriage may then be moved to the left or in the direction of the arrow *c* in Fig. 6 and the effect of this movement is to carry the group of column stops into contact with the contact members 72ª and 74ª of the positioning device or plate 70ª where they are arrested, while a further movement of the column stop bar and carriage independently of the group of column stops may be effected. This movement of the carriage to the left may be brought about by successive operations of the spacing key or in any suitable manner. When the carriage reaches the desired position where the first column stop is to be set, it is merely necessary to depress the key 51 to effect a movement of the stop setting finger 67 from the position shown in Figs. 1 and 3 to the position indicated in Figs. 4 and 7. The effect of this actuation of the key is to bring the rear engaging end of the stop setting finger 67 into contact with the engaging face 75 on the left-hand column stop of the group, thereby turning the column stop from the released position down into engagement with the locking bar 15, as indicated in Fig. 7. Pressure is released on the key 51 and the carriage is then stepped to the left until it arrives at the position where the next column stop is to be set. The key 51 is again depressed to move the left-hand column stop of the group to and lock it in operative position in a manner hereinbefore pointed out, and so on the column stops may be individually and successively set and locked against relative adjustment along the column stop bar.

The positions to which the various column stops are to be set may be determined by a sheet introduced in the machine and may be set as the writing proceeds. If desired, the column stops may be set with reference to ruled lines on a sheet in the machine, or the column stops may be set by reference to an off-set auxiliary setting pointer 76 which coöperates with the usual carriage scale 76ª. Where the pointer 76 is used it will be understood that the setting is effected with the aid of this pointer after the positions, where the column stops are to be set have been previously determined. The extent of off-set of the auxiliary stop setting pointer 76 from the usual carriage scale pointer 77 corresponds to the distance that the stop set finger 67 is off-set from the left-hand or decimal stop 39. We will assume, for example, that a stop is to be set at "30" so that such stop, when it coacts with the decimal stop, will arrest the carriage when the index "30" is in register with the carriage pointer 77. The carriage in these circumstances should be positioned so that the index mark "30" on the carriage scale registers with the pointer 76. Then the key 51 may be actuated and a column stop will be set in the proper position to arrest the carriage at "30" when the decimal stop is actuated.

From the foregoing description it will be understood that a single movement of the carriage from left to right, when the key 51 is depressed, is effective to turn all of the column stops out of engagement with the locking bar 15 and to move them between the two arresting devices 70 and 70ª and that the stops may be grouped, as indicated in Fig. 5, against the right-hand arresting or positioning plate 70. It will also be understood that no further operations of the mechanism are necessary preparatory to setting the stops. Thus the movement of the carriage from right to left will carry the column stops into coöperation with the arresting plate 70ª where they will be maintained in coöperative relation with the stop setting finger 67, and when the carriage reaches the desired position where a column stop is to be set, an actuation of the key 51 is effective to set such stop. A further movement of the carriage to the left brings and maintains the next column stop into register with the stop setting finger 67 and into position where such column stop is adapted to be moved by the stop setting finger into locking engagement with the locking bar 15, and so on until all of the column stops are set in the desired positions. It will be seen, therefore, that a single continuous movement of the carriage from left to right, when the key 51 is depressed, is effective to successively release all of the column stops and group them one next to and against another, as indicated in Fig. 5, ready for a resetting of the stops in the new arrangement.

While the stop setting finger 67 and the clearing device or cam 68 are two separate devices, they nevertheless are carried by a single member 66 to form integral parts thereof. Moreover this same key 51 is effective to actuate the stop setting device and to render the clearing device operative on the column stops, although the two devices are

controlled in a different manner by the key. Thus each actuation or depression of the key 51 is operative to effect a pivotal movement of a column stop to throw it into locking engagement with the locking bar 15, whereas pressure exerted and maintained on the finger key 51 is effective to maintain the cam 68 in its operative position so that a movement of the carriage from left to right at this time will bring the column stops successively into engagement with the cam to release them from locking engagement with the column stop bar so that they are free to receive a relative adjustment along the stop bar.

It will be understood from the foregoing description that the mechanism is simple in construction and the operations of clearing and setting the stops are easily and quickly effected.

Although the stop setting device 67 and the clearing device 68 are arranged on one side of the column stop bar and both co-act with the same end of each column stop, nevertheless these devices are operative to move the column stops in opposite directions, the clearing device turning each stop up out of engagement with its locking means and the setting device turning each stop down into engagement with its locking means.

It will be understood that the clearing device 68 constitutes means whereby the travel of the carriage from left to right is rendered effective to turn the column stops out of operative position and out of engagement with their locking means, and into cooperative relation with the stop positioning means 70 and 70^a.

While I have shown but six column stops in the present instance, it will be observed that the space between the two stop positioning plates 70 and 70^a, as at present arranged, is sufficient to receive as many as nineteen column stops, and this is as many as ordinarily will ever be required at any one time, even on a very long carriage machine. In practice I prefer to employ as many column stops on the column stop bar as may ever be required for use at any one time, and this of course will vary according to the length of the carriage and according to different conditions of use. However, the plates 70 and 70^a should be spaced apart so as to receive the entire series of column stops between them, whatever be the number of stops employed. If the operator intends to use fewer stops than those mounted on the stop bar, it is merely necessary to position the number of stops desired for use, which, for example, may be assumed to be three, and after the third stop has been set the remaining stops, which, in the present construction would be three, may be moved down in adjacent letter space positions into locking engagement with the column stop bar with the aid of the stop set device. In other words, after the third stop is locked in position the three remaining stops may be locked in adjacent letter space positions to the right of the third stop which has been set, so that the last four stops to the right will virtually constitute one stop with which the denominational stops coöperate.

While I have described with considerable detail a construction in which the column stops are carried by the carriage and in which the stop positioning members 70 and 70^a, the setting device 67 and the clearing device 68 are carried by the frame of the machine, it should be understood that from certain aspects of my invention the parts in question may be otherwise arranged and that various modifications may be made without departing from my invention. Moreover, certain features of the invention may be employed without others or in combination with other features different from those disclosed herein.

While I have referred herein to a "carriage," it should be understood that this term is employed in a generic sense and is intended to include typewriter carriages whether or not such carriages carry a platen.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops each adapted to receive a relative sliding adjustment to different points along the bar, locking means, means operating individually on the stops for effecting a locking engagement between said stops and said locking means, thus locking the stops against relative adjustment along said bar, releasing means for releasing the stops from said locking means, and stop positioning means, the stop positioning means and column stops being mounted for relative movement in the direction of the travel of the carriage and the positioning means being adapted to hold the stops relatively thereto during movement of the carriage, the releasing means being effective to bring the stop positioning means and column stops into coöperating relation.

2. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops each adapted to be locked relatively to said bar or to receive a relative sliding adjustment to different points along the bar, each stop also being movable in a plane which extends transversely of the column stop bar, means for locking the stops against relative adjustment along said bar, and releasing means for releasing the stops from said locking means, said releasing means comprising a device which is operative successively on the stops during the travel of the carriage to effect such transverse movements of the

stops and thereby release the stops from their locking means.

3. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops each adapted to be locked relatively to said bar or to receive a relative sliding adjustment to different points along the bar, each stop also being movable in a plane which extends transversely of the column stop bar, means for locking the stops against relative adjustment along said bar, releasing means for releasing the stops from said locking means, said releasing means comprising a device which is operative successively on the stops during the travel of the carriage to effect such transverse movements of the stops and thereby release the stops from their locking means, the series of column stops and releasing means being carried one on the carriage and the other on the frame of the machine.

4. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, locking means which are coöperative with said stops to lock them against relative adjustment longitudinally of the bar, a cam coöperative with said column stops to effect a movement of the stops transversely of the column stop bar in one direction to release the stops from their locking means, and a single key-actuated means operable individually on said stops to effect a movement of the stops in the opposite direction to bring about an engagement of the column stops with their locking means.

5. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, locking means which are coöperative with said stops to lock them against relative adjustment longitudinally of the bar, a cam coöperative with said column stops to effect a movement of the stops transversely of the column stop rod in one direction to release the stops from their locking means, said cam being movable into and out of coöperative relation with said column stops, a single moving means operable individually on said stops to effect a movement of the stops in the opposite direction to bring about an engagement of the column stops with their locking means, and a key for controlling said moving means.

6. In a typewriting machine and tabulating mechanism, the comination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is coöperative with said stops to move them successively transversely of the column stop bar, and a key for controlling the movement of said cam into and out of coöperative relation with said column stops.

7. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is cooperative with said stops to move them successively transversely of the column stop bar, and a key for controlling the movement of said cam into and out of coöperative relation with said column stops, the series of column stops and said cam being carried one by the carriage and the other by the frame of the machine so that said stops may be moved from one transverse position to another by said cam when the two are in cooperative relation and a traveling movement of the carriage is effected.

8. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is cooperative with said stops to move them successively transversely of the column stop bar in one direction, the series of column stops and said cam being carried one by the carriage and the other by the frame of the machine, so that said stops may be moved from one transverse position to another by said cam when the two are in coöperative relation and a traveling movement of the carriage is effected, a single device operative

individually on said column stops to move them in the opposite direction transversely of the column stop bar, and a key for controlling said device.

9. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is cooperative with said stops to move them successively transversely of the column stop bar in one direction, the series of column stops and said cam being carried one by the carriage and the other by the frame of the machine so that said stops may be moved from one transverse position to another by said cam when the two are in coöperative relation and a traveling movement of the carriage is effected, a single device operative indvidually on said column stops to move them in the opposite direction transversely of the column stop bar, a key for controlling said device, and means for locking the column stops relatively to the column stop bar and against relative adjustment longitudinally thereof.

10. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two positions transversely of the bar to which the stops may be moved, locking means which are coöperative with said stops to lock them against relative adjustment longitudinally of the bar, the movement of the stops transversely of the column stop bar in one direction effecting an engagement between said stops and their locking means and a transverse movement of the column stops in the opposite direction effecting a disengagement between said column stops and their locking means, means for effecting a transverse movement of the column stops in one direction to disengage the column stops from their locking means, and separate key controlled means operative individually on said stops to move them transversely in the opposite direction to effect an engagement thereof with their locking means.

11. In a typewriting machine, the combination of a carriage, a column stop bar carried thereby, a series of column stops carried by the carriage and each having a relatively sliding adjustment along said stop bar and also having individual movement in a plane which extends transversely of said bar, locking means coöperative with said stops to lock them against relative adjustment along said bar, key controlled means on the frame of the machine and operative individually on the column stops to move them transversely of the column stop bar in one direction and into engagement with their locking means, and means on the frame of the machine and operative successively on the column stops to move them transversely of the column stop bar in the opposite direction and out of engagement with their locking means.

12. In a typewriting machine, the combination of a stop bar, a series of stops each mounted on said stop bar for relative individual sliding adjustment along the same and for individual movement in a plane which extends transversely of said bar and to either one of two positions, each of said stops being adapted to remain indefinitely in either of the said two transverse positions, and a series of teeth which extend longitudinally of said bar and with which the stops engage when they are moved to one of said transverse positions and from which teeth the stops are disengaged when they are moved to the other of said transverse positions, to lock the stops relatively to the rod in one instance and to free the stops for relative adjustment longitudinally of the rod in the other instance.

13. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar carried by the carriage, a series of column stops mounted for relative sliding adjustment along said bar, locking means for locking the column stops and bar against relative sliding adjustment, means operating successively to release the column stops from said locking means, and positioning means carried by the frame of the machine and coöperative with the column stops to hold the released stops against movement with the carriage while the column stop bar continues its movement with the carriage, and key controlled tabulator stop mechanism coöperative with said column stops.

14. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops mounted for relative sliding adjustment along and on said bar and also mounted for individual movement in a plane which extends transversely of the bar, locking means for locking the stops against relative adjustment along said bar, means operative individually on the stops for moving each stop in a plane which extends transversely of the stop bar to release them from said locking means, and a stop positioning device which is separate from said releasing

means and which is in coöperative relation with said column stops when the latter are moved to release them from their locking means.

15. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar carried thereby, a series of column stops carried by the carriage and mounted for relative sliding adjustment on and along said column stop bar, each stop being also mounted for individual movement in a plane which extends transversely of the bar, said stops being adapted to remain indefinitely in either one of two different transverse positions to which they may be moved, locking means with which the stops are coöperative to lock the stops against relative adjustment along the bar, means carried by the frame of the machine and operative individually on the stops to move each stop in a plane which extends transversely of the bar in one direction to effect an engagement of the stops with their locking means, releasing means for effecting such transverse movements of the stops in the opposite direction to disengage them from their locking means, and stop positioning means which coöperate with the stops after the latter are disengaged from their locking means.

16. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops adapted to receive a relative sliding adjustment on and along the column stop bar, locking means for locking the stops in their adjusted positions, means for successively releasing the stops from their locking means during the travel of the carriage from left to right, and positioning means in the path of the released stops to arrest them after they have been released and to hold them while the carriage and column stop bar continue their movement to the right.

17. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops adapted to receive a relative sliding adjustment along and on the column stop bar, locking means for locking the stops in their adjusted positions, means for successively releasing the stops from their locking means during the travel of the carriage from left to right, positioning means in the path of the released stops to arrest them after they have been released and to hold them while the carriage and column stop bar continue their movement to the right, and separate stop positioning means for arresting the stops in their movement to the left to hold the stops while the stop bar and carriage continue their movement to the left.

18. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops adapted to receive a relative adjustment along the column stop bar, locking means for locking the stops in their adjusted positions, means for successively releasing the stops from their locking means during the travel of the carriage from left to right, positioning means in the path of the released stops to arrest them after they have been released and to hold them while the carriage and column stop bar continue their movement to the right, separate stop positioning means for arresting the stops in their movement to the left to hold the stops while the stop bar and carriage continue their movement to the left, and key controlled means operable individually on said stops to effect a locking engagement between them and their locking means, said last mentioned positioning means holding the stops so that one of the stops will be in coöperative relation or in register with said key controlled means.

19. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops adapted to receive a relative adjustment along the column stop bar, locking means for locking the stops in their adjusted positions, means for successively releasing the stops from their locking means during the travel of the carriage from left to right, and positioning means in the path of the released stops to arrest them after they have been released and to hold them while the carriage and column stop bar continue their movement to the right, said positioning means and stops being normally maintained out of coöperative relation one with the other and said releasing means being effective to bring the positioning means and stops into coöperative relation.

20. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops each adapted to be locked relatively to said bar or to receive a relative adjustment to different points along the bar, each stop also being movable in a plane which extends transversely of the column stop bar, means for locking the stops against relative adjustment along said bar, releasing means for releasing the stops from said locking means, said releasing means comprising a device which is operative successively on the stops during the travel of the carriage to effect such transverse movements of the stops and thereby release the stops from their locking means, and stop positioning means coöperative with the released stops to hold them relatively thereto while an independent longitudinal movement of the column stop bar is effected.

21. In a typewriting machine, the combination of a carriage, a column stop bar, a

series of column stops each adapted to be locked relatively to said bar or to receive a relative sliding adjustment to different points along the bar, each stop also being movable in a plane which extends transversely of the column stop bar, means for locking the stops against relative adjustment along said bar, releasing means for releasing the stops from said locking means, said releasing means comprising a device which is operative successively on the stops during the travel of the carriage to effect such transverse movements of the stops and thereby release the stops from their locking means, stop positioning means coöperative with the released stops to hold them relatively thereto while an independent longitudinal movement of the column stop bar in one direction is effected, and a second stop positioning means coöperative with the stops to hold them while an independent longitudinal movement of the column stop bar in the opposite direction is effected.

22. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two transverse positions to which the stops may be moved, locking means which are coöperative with said stops to lock them against relative adjustment longitudinally of the bar, a cam coöperative with said column stops to effect a transverse movement of the stops in one direction to release the stops from their locking means, a single key actuated means operable individually on said stops to effect a movement of the stops in the opposite direction to bring about an engagement of the column stops with their locking means, and a stop positioning device coöperative with the released column stops to hold them relatively thereto while a relative sliding adjustment is being effected between the column stop bar and column stops.

23. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative sliding adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two transverse positions to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is coöperative with said stops to move them successively to effect successively transverse movements thereof, a key for controlling the movement of said cam into and out of coöperative relation with said column stops, and a stop positioning device coöperative with the released column stops to hold them relatively thereto while a relative sliding adjustment is being effected between the column stop bar and column stops.

24. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two transverse positions to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is coöperative with said stops to effect successively a transverse movement of the column stops, a key for controlling the movement of said cam into and out of coöperative relation with said column stops, the series of column stops and said cam being carried one by the carriage and the other by the frame of the machine so that said stops may be moved from one transverse position to another by said cam when the two are in coöperative relation and a traveling movement of the carriage is effected, and a stop positioning device coöperative with the released column stops to hold them relatively thereto while a relative sliding adjustment is being effected between the column stop bar and column stops.

25. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two transverse positions to which the stops may be moved, a cam which is movable into and out of coöperative relation with said column stops and which is coöperative with said stops to successively effect a transverse movement of the column stop bar in one direction, a key for controlling the movement of said cam into and out of coöperative relation with said column stops, the series of column stops and said cam being carried one by the carriage and the other by the frame of the machine, so that said stops may be moved from one transverse position to another by said cam when the two are in coöperative relation and a traveling movement of the carriage is effected, and a single key controlled device operative individually on said column stops to effect a transverse movement of them in the opposite direction, and a stop positioning device coöperative with the released column stops to hold them relatively thereto while a relative sliding adjustment is being effected between the column stop bar and column stops.

26. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each having a relative adjustment along said bar and also having a movement in a plane which extends transversely of said bar, each of said stops being adapted to remain indefinitely in either of two transverse positions to which the stops may be moved, locking means which are coöperative with said stops to lock them against relative adjustment longitudinally of the bar, a transverse movement of the stops in one direction effecting an engagement between said stops and their locking means and a transverse movement of the column stops in the opposite direction effecting a disengagement between said column stops and their locking means, means for effecting a transverse movement of the column stops in one direction to disengage them from their locking means, separate key controlled means operative individually on said stops to move them in the opposite direction to effect an engagement thereof with their locking means, and a stop positioning device coöperative with the released column stops to hold them relatively thereto while a relative adjustment is being effected between the column stop bar and column stops.

27. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops mounted for relative adjustment along said stop bar, means for locking the stops in their adjusted positions, and key controlled means by which a single traveling movement of the carriage from left to right is operative to release the stops from their locking means and group them together near the left-hand end of the stop bar preparatory to a resetting of the stops.

28. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops mounted for relative adjustment along said stop bar, means for locking the stops in their adjusted positions, stop setting means operating individually on the stops to effect an engagement thereof with their locking means, and key controlled means by which a single traveling movement of the carriage from left to right is operative to release the stops from their locking means and group them together near the left-hand end of the stop bar and to the right of the stop setting means preparatory to an individual setting of the stops.

29. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar, means for locking said stops against relative adjustment along said bar, a positioning device against which the entire series of column stops is adapted to be grouped, a key, and means which are operative when said key is maintained in the actuated position and when a relative movement between the stops and said positioning device is effected for releasing the stops from their locking means and for grouping the stops against said positioning device.

30. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar, means for locking said stops against relative adjustment along said bar, a positioning device against which the entire series of column stops is adapted to be grouped, a key, means which are operative when said key is maintained in the actuated position and when a relative movement between the stops and said positioning device is effected for releasing the stops from their locking means and for grouping the stops against said positioning device, and a key controlled stop setting device operable individually on said stops to bring about a locking engagement between said stops and their locking means.

31. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar, means for locking said stops against relative adjustment along said bar, a positioning device against which the entire series of column stops is adapted to be grouped, a key, means which are operative when said key is maintained in the actuated position and when a relative movement between the stops and said positioning device is effected for releasing the stops from their locking means and for grouping the stops against said positioning device, a key controlled stop setting device operable individually on said stops to bring about a locking engagement between said stops and their locking means, and means for restraining the grouped stops in given relation to said stop setting device.

32. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar, means for locking said stops against relative adjustment along said bar, two positioning members which are spaced apart to receive the entire series of column stops between them and against one of which positioning devices the series of stops is adapted to be grouped, a key, and means which are operative when said key is maintained in the actuated position, and

stops against said positioning device, key controlled stop setting means operable individually on said column stops for effecting a transverse movement thereof in the opposite direction to bring about an engagement between the stops and their locking means, and a second positioning device arranged at the opposite side of the group of stops when they are grouped against said first mentioned positioning device, the second positioning device restraining the group of stops in a given relation to said stop setting means.

38. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a wiper for effecting a pivotal movement of said stops out of operative position, and means for bringing said wiper and stops into coöperative relation.

39. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a wiper for effecting a pivotal movement of said stops out of operative position, and means for bringing said wiper and stops into coöperative relation, the series of column stops and wiper being carried one on the carriage and the other on the frame of the machine.

40. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, means by which the column stops are retained indefinitely in either the operative or inoperative positions, means for locking the stops against relative adjustment along their support, a wiper for effecting a pivotal movement of said stops out of operative position, and means for bringing said wiper and stops into coöperative relation.

41. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, and means for bringing said clearing device and column stops into coöperative relation.

42. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into coöperative relation, and a single key-actuated device operative individually on said column stops to turn them to operative position.

43. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, and means for bringing said clearing device and column stops into coöperative relation, the column stops and clearing devices being carried one on the carriage and the other on the frame of the machine so that a movement of the carriage is effective when the clearing device and stops are in cooperative relation to turn the stop to inoperative position.

44. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, means by which the column stops are retained indefinitely in either the operative or inoperative position, means for locking the stops against relative adjustment along their support, a clearing device operative successively on said column stops to turn them to inoperative position, and means for bringing said clearing device and column stops into cooperative relation, the column stops and clearing device being carried one on the carriage and the other on the frame of the machine, so that a movement of the carriage is effective when the clearing device and stops are in coöperative relation to turn the stops to inoperative position.

45. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, means by which the column stops are retained indefinitely in either the operative or inoperative positions, means for locking the stops against relative adjustment along their support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into coöperative relation, the column stops and clearing device being carried one on the carriage and the other on the frame of the machine, so that a movement of the carriage is effective when the clearing device and stops are in coöperative relation to turn the stops to in-

when a relative movement between said stops and positioning devices is effected for releasing the stops from their locking means and for grouping the stops against one of said positioning devices and in the space bounded by said positioning devices.

33. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar, means for locking said stops against relative adjustment along said bar, two positioning members which are spaced apart to receive the entire series of column stops between them and against one of which positioning devices the series of stops is adapted to be grouped, a key, means which are operative when said key is maintained in the actuated position and when a relative movement between said stops and positioning devices is effected for releasing the stops from their locking means and for grouping the stops against one of said positioning devices and in the space bounded by said positioning devices, and key controlled means operable individually on said column stops to bring about a locking engagement between said stops and their locking means.

34. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar and each stop being movable also in a plane which extends transversely of the stop bar, means for locking the stops against relative adjustment along said bar, the transverse movement of each stop throwing it into and out of locking engagement with its locking means, a positioning device against which the entire series of column stops is adapted to be grouped, a key, and means which are operative when said key is maintained in the actuated position and when a relative movement between said stops and positioning device is effected for effecting a transverse movement of the stops to release them from their locking means and for effecting a grouping of the released stops against said positioning device.

35. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar and each stop being movable also in a plane which extends transversely of the stop bar, means for locking the stops against relative adjustment along said bar, the transverse movement of each stop throwing it into and out of locking engagement with its locking means, a positioning device against which the entire series of column stops is adapted to be grouped, a key, means which are operative when said key is maintained in the actuated position and when a relative movement between said stops and positioning device is effected for effecting a transverse movement of the stops to release them from their locking means and for effecting a grouping of the released stops against said positioning device, and key controlled stop setting means operable individually on said column stops for effecting a transverse movement thereof in the opposite direction to bring about an engagement between the stops and their locking means.

36. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar and each stop being movable also in a plane which extends transversely of the stop bar, means for locking the stops against relative adjustment along said bar, the transverse movement of each stop throwing it into and out of locking engagement with its locking means, a positioning device against which the entire series of column stops is adapted to be grouped, a key, means which are operative when said key is maintained in the actuated position and when a relative movement between said stops and positioning device is effected for effecting a transverse movement of the stops to release them from their locking means and for effecting a grouping of the released stops against said positioning device, and a second positioning device arranged at the opposite side of the group of stops when they are grouped against said first mentioned positioning device, the second positioning device operating to restrain the grouped stops against movement relatively thereto in one direction.

37. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that said stops may be adjusted to different positions lengthwise of the bar and each stop being movable also in a plane which extends transversely of the stop bar, means for locking the stops against relative adjustment along said bar, the transverse movement of each stop throwing it into and out of locking engagement with its locking means, a positioning device against which the entire series of column stops is adapted to be grouped, a key, means which are operative when said key is maintained in the actuated position and when a relative movement between said stops and positioning device is effected for effecting a transverse movement of the stops to release them from their locking means and for effecting a grouping of the released

operative position, and a key actuated device operable individually on the column stops to turn them to operative position and into engagement with their locking means.

46. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a wiper for effecting a pivotal movement of said stops out of operative position, means for bringing said wiper and stops into coöperative relation, and a stop positioning device with which the column stops are brought into coöperative relation when they are turned to inoperative position by said wiper.

47. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a wiper for effecting a pivotal movement of said stops out of operative position, means for bringing said wiper and stops into coöperative relation, and a stop positioning device with which the column stops are brought into coöperative relation when they are turned to inoperative position by said wiper, the series of column stops and positioning devices being carried one by the carriage and the other by the frame of the machine.

48. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, means by which the column stops are retained indefinitely in either the operative or inoperative position, means for locking the stops against relative adjustment along their support, a wiper for effecting a pivotal movement of said stops out of operative position, means for bringing said wiper and stops into coöperative relation, and a stop positioning device with which the column stops are brought into coöperative relation when they are turned to inoperative position by said wiper.

49. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into coöperative relation, and a stop positioning device coöperative with the column stops when they are in the inoperative position.

50. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into coöperative relation, a stop positioning device coöperative with the column stops when they are in the inoperative position, and a single key actuated device operative individually on said column stops to turn them to operative position.

51. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into coöperative relation, the column stops and clearing devices being carried one on the carriage and the other on the frame of the machine so that a movement of the carriage is effective when the clearing device and stops are in coöperative relation to turn the stops to inoperative position, and a stop positioning device with which the column stops are brought into coöperative relation when they are turned to inoperative position.

52. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into coöperative relation, the column stops and clearing devices being carried one on the carriage and the other on the frame of the machine so that a movement of the carriage is effective when the clearing device and stops are in coöperative relation to turn the stops to inoperative position, and a stop positioning device with which the column stops are brought into coöperative relation when they are turned to inoperative position, and means operable individually on the column stops to turn them to operative position.

53. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops mounted on their support for pivotal movement into and out of operative position and for relative adjustment along said support, means by which the column stops are retained indefinitely in either the operative or inoperative positions, means for locking the stops

against relative adjustment along their support, a clearing device operative successively on said column stops to turn them to inoperative position, means for bringing said clearing device and column stops into cooperative relation, the column stops and clearing device being carried one on the carriage and the other on the frame of the machine, so that a movement of the carriage is effective when the clearing device and stops are in coöperative relation to turn the stop to inoperative position, and a stop positioning device with which the column stops are coöperative when they are turned to inoperative position.

54. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each mounted for relative sliding adjustment along said column stop bar and for movement in a plane which extends transversely of said bar, a stop positioning device fixed to the part which carries it, the series of column stops and the stop positioning device being carried one by the carriage and the other by the frame of the machine, and means operable successively on the column stops to effect a transverse movement of the column stops to bring them into coöperative relation with said stop positioning device.

55. In a typewriting machine, the combination of a carriage, a stop bar carried thereby, a series of column stops each mounted for relative sliding adjustment along said bar and for movement in a plane which extends transversely of the bar, a fixed stop positioning device carried by the frame of the machine, and means operable successively on the stops to effect a transverse movement of the stops to bring them into coöperative relation with said stop positioning device.

56. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each mounted for relative sliding adjustment along said column stop bar and for movement in a plane which extends transversely of said bar, a stop positioning device fixed to the part which carries it, the series of column stops and the stop positioning device being carried one by the carriage and the other by the frame of the machine, means operable successively on the column stops to effect a transverse movement of the column stops to bring them into coöperative relation with said stop positioning device, and key controlled means operable individually on said column stops to effect a transverse movement of the stops out of coöperative relation with said stop positioning means.

57. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each mounted for relative sliding adjustment along said column stop bar and for movement into and out of operative position in a plane which extends transversely of said bar, means for locking the stops against relative sliding adjustment along the column stop bar when the stops are in the operative position, a stop positioning device fixed to the part which carries it, the series of column stops and the stop positioning device being carried one by the carriage and the other by the frame of the machine, and means operable successively on the column stops to move them to inoperative position and out of engagement with their locking means and to bring them into coöperative relation with said stop positioning device.

58. In a typewriting machine and tabulating mechanism, the combination of a carriage, a column stop bar, a series of column stops each mounted for relative sliding adjustment along said column stop bar and for movement into and out of operative position in a plane which extends transversely of said bar, means for locking the stops against relative sliding adjustment along the column stop bar when the stops are in the operative position, a stop positioning device fixed to the part which carries it, the series of column stops and the stop positioning device being carried one by the carriage and the other by the frame of the machine, means operable successively on the column stops to move them to inoperative position and out of engagement with their locking means and to bring them into cooperative relation with said stop positioning device, and key controlled means operable individually on the column stops to move them to operative position and into engagement with their locking means.

59. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar carried thereby, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of the bar, means for locking the column stops against relative sliding adjustment along the column stop bar when the column stops are in the operative position, a fixed stop positioning device carried by the frame of the machine, clearing means carried by the frame of the machine and operable successively on the column stops to move them to inoperative position and out of engagement with said locking means, a stop set positioning device fixed to the frame of the machine and into coöperative relation with which the stops are moved by said clearing means, and key controlled means carried by the frame of the machine and operable individually on the column stops to move them

to the operative position and into engagement with their locking means.

60. In a typewriting machine, the combination of a carriage, a stop bar, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of said bar, a stop positioning device, and means whereby the travel of the carriage is rendered effective to move the column stops out of operative position and into coöperative relation with said stop positioning device to hold the stops relatively thereto.

61. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of said bar, two stop positioning devices spaced apart to receive the entire series of column stops between them, and means whereby the travel of the carriage is rendered effective to move the column stops out of the operative position and into the space between said positioning devices and into coöperative relation therewith.

62. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of said bar, a stop positioning device, a cam, and means for moving the cam into and out of coöperative relation with the column stops, the cam rendering the travel of the carriage effective to move the column stops out of operative position and into coöperative relation with said stop positioning device to hold the stops relatively thereto.

63. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of said bar, two stop positioning devices spaced apart to receive the entire series of column stops between them, a cam, and means for moving said cam into and out of coöperative relation with said stops, the cam rendering the travel of the carriage effective to move the column stops out of the operative position and into the space between said positioning devices and into coöperative relation therewith.

64. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar carried thereby, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of said bar, a stop positioning device fixed to the frame of the machine, and key controlled means operative successively on said stops during the travel of the carriage to move the column stops to the inoperative position and into coöperative relation with said stop positioning device so as to hold the stops which are moved against the positioning device while the stop bar and carriage continue their movement independently thereof.

65. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar carried thereby, a series of column stops each mounted for relative sliding adjustment along said bar and for movement into and out of operative position in a plane which extends transversely of said bar, two stop positioning devices fixed to the frame of the machine and spaced apart to receive the entire series of column stops between them, and key controlled means operative successively on said stops during the travel of the carriage to move the column stops to the inoperative position and between said stop positioning devices and into coöperative relation therewith.

66. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops, locking means for locking the stops against relative sliding adjustment along the stop bar, each column stop being mounted for sliding adjustment along the stop bar and also for movement relatively to said locking means to effect an engagement and disengagement between the stops and their locking means, stop positioning means on the frame of the machine, and releasing means on the frame of the machine for moving the stops out of engagement with their locking means and into coöperative relation with said positioning means.

67. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops, locking means for locking the stops against relative sliding adjustment along the stop bar, each column stop being mounted for sliding adjustment along the stop bar and also for movement relatively to said locking means to effect an engagement and disengagement between the stops and their locking means, stop positioning means on the frame of the machine, releasing means on the frame of the machine for moving the stops out of engagement with their locking means and into coöperative relation with said positioning means, and key actuated means on the frame of the machine for moving said stops out of coöperative relation with the positioning means and into engagement with said locking means.

68. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar, a series of column stops, locking means for locking the stops against relative sliding adjustment along the stop bar, each column stop being mounted for sliding adjustment along the stop bar and also for movement relatively to said locking means to effect an engagement and disengagement between the stops and their locking means, stop positioning means comprising two stop positioning devices spaced apart to receive the entire series of column stops between them, the series of column stops and the stop positioning means being carried one by the carriage and the other by the frame of the machine, and releasing means operative on the column stops only when the latter are within the field of said positioning devices to disengage the column stops from their locking means and move them into the space between said positioning devices and into coöperative relation therewith.

69. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar carried thereby, a series of column stops, locking means for locking the stops against relative sliding adjustment along the stop bar, each column stop being mounted for sliding adjustment along the stop bar and also for movement relatively to said locking means to effect an engagement and disengagement between the stops and their locking means, stop positioning means on the frame of the machine, said stop positioning means comprising two stop positioning devices fixed to the frame of the machine and spaced apart to receive the entire series of column stops between them, and key actuated releasing means on the frame of the machine for moving the column stops out of engagement with their locking means and into the space between said positioning devices and into coöperative relation therewith, the releasing means being operative on said stops only when they are opposite the space between said positioning devices.

70. In a typewriting machine and tabulating mechanism, the combination of a carriage, a stop bar carried thereby, a series of column stops, locking means for locking the stops against relative sliding adjustment along the stop bar, each column stop being mounted for sliding adjustment along the stop bar and also for movement relatively to said locking means to effect an engagement and disengagement between the stops and their locking means, stop positioning means on the frame of the machine, said stop positioning means comprising two stop positioning devices fixed to the frame of the machine and spaced apart to receive the entire series of column stops between them, key actuated releasing means on the frame of the machine for moving the column stops out of engagement with their locking means and into the space between said positioning devices and into coöperative relation therewith, the releasing means being operative on said stops only when they are opposite the space between said positioning devices, and key controlled means contained between said positioning devices for moving the column stops out of coöperative relation with said positioning device and into engagement with said locking means.

71. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, and a single key controlled member operative on said stops to move them individually either to the operative or to the inoperative position as may be desired, the movement of said stops to one of said positions being controlled by a movement of the member, and the movement of the stops to the other of said positions being by a relative movement of the stops past said member.

72. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops carried by the carriage and movable into and out of operative position and adapted to remain indefinitely in either of said positions, and a single key controlled member carried by the frame of the machine and operative on said stops to move them individually either to the operative or to the inoperative position as may be desired, the movement of each of said stops to one of said positions being controlled by a movement of the member under the actuation of its key and the movement of the stops to the other of said positions being by a movement of the stops past said member while it is held in the operative position.

73. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, a finger by which the stops may be moved individually to operative position, a cam by which the stops may be moved successively to inoperative position during the travel of the carriage, and a single key for controlling said finger and cam.

74. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops carried by the carriage and movable into and out of operative position and adapted to remain indefinitely in either of said positions, a finger by which the stops may be moved individually to operative position, a cam by which the stops may be moved successively

to inoperative position during the travel of the carriage, said finger and cam being formed from a single piece of metal, and a single key for controlling said finger and cam.

75. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, a finger by which the stops may be moved individually to operative position, a cam by which the stops may be moved successively to inoperative position during the travel of the carriage, and a single key for controlling said finger and cam, the series of column stops and the cam and finger being carried one by the carriage and the other by the frame of the machine.

76. In a typewriting machine and tabulating mechanism, the combination of a carriage, a series of column stops movable into and out of operative position and adapted to remain indefinitely in either of said positions, each of said stops also being movable in a plane which extends transversely of the stop bar, locking means with which the stops are thrown into and out of engagement by such transverse movements, and a single key controlled member operative on said stops to move them individually into or out of engagement with their locking means.

77. In a typewriting machine, the combination of a carriage, a stop bar, a series of column stops mounted for movement into and out of operative position, and a key controlled member at one side of the column stop bar and operative on the same end of each stop to effect a movement of the stops individually either to or from operative position as may be desired.

78. In a typewriting machine, the combination of a carriage, a stop bar, a series of column stops mounted for movement into and out of operative position, and a key controlled member at one side of the column stop bar and operative on the same end of each stop to effect a movement of the stops individually either to or from operative position as may be desired, the series of column stops and said key controlled member being carried one by the carriage and the other by the frame of the machine and the movement of the stops being effected by said member under the actuation of its key and the movement of the column stops to inoperative position being effected by said member while it is held in coöperative relation with the stops and a traveling movement of the carriage is effected.

79. In a typewriting machine, the combination of a carriage, a stop bar, a series of column stops mounted for movement into and out of operative position, a key controlled member at one side of the column stop bar and operative on the same end of each stop to effect a movement of the stops individually either to or from operative position as may be desired, and a stop positioning device with which the stops are moved into coöperative relation when they are moved from the operative position.

80. In a typewriting machine, the combination of a carriage, a stop bar, a series of column stops mounted for movement into and out of operative position, a key controlled member at one side of the column stop bar and operative on the same end of each stop to effect a movement of the stops individually either to or from operative position as may be desired, the series of column stops and said key controlled member being carried one by the carriage and the other by the frame of the machine and the movement of the stops being effected by said member under the actuation of its key and the movement of the column stops to inoperative position being effected by said member while it is held in coöperative relation with the stops and a traveling movement of the carriage is effected, and a stop positioning device with which the stops are moved into coöperative relation when they are moved from the operative position during the traveling movement of the carriage.

81. In a typewriting machine, the combination of a carriage, a stop bar, a series of column stops mounted for relative sliding adjustment along said stop bar and pivotal movement into and out of operative position, and a key controlled member at one side of the stop bar and operative on the same end of each stop to effect an individual pivotal movement thereof in one direction or another to move the stops individually to or from operative position as may be desired.

82. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that the stops may be located at different positions along said bar, two stop positioning members between which the entire series of stops may be received and with both of which positioning devices the stops are in coöperative relation when the stops are located in the space between said members, and means whereby a relative movement in the direction of the travel of the carriage between said stops and positioning devices is effective to bring the stops and both positioning devices into cooperative relation.

83. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops mounted thereon, the bar and stops having a relative sliding movement one on the other so that the stops may be located at different positions along said bar, two stop positioning members between

which the entire series of stops may be received and with both of which stop positioning members the stops are in coöperative relation when the stops are between said members, and means whereby a relative movement in the direction of the travel of the carriage between said stops and positioning devices is effective to bring the stops and both positioning devices into coöperative relation.

84. In a typewriting machine, the combination of a carriage, a column stop bar, a series of column stops, the bar and stops being relatively adjustable so that the stops may be located at different positions along said bar, each of said stops having a movement in a plane which extends transversely of said stop bar, locking means with which the stops are thrown into and out of engagement by said transverse movements, two stop positioning members between which the entire series of stops may be received and with both of which positioning members the stops are in coöperative relation when the stops are between said members, and means whereby a relative movement in the direction of the travel of the carriage between said stops and positioning devices is effective to disengage said stops from their locking means and bring the stops and both positioning devices into coöperative relation.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 9th day of May A. D. 1912.

ARTHUR W. SMITH.

Witnesses:
CHARLES E. SMITH,
M. F. HANNWEBER.